

CLAIMS

1. An insulation displacement connector with a built-in board, comprising:

an insulation displacement terminal including:

5 a body having an insulation displacement blade connectable with an insulated wire at an intermediate portion of the insulated wire by insulation displacement; and

a lead extending from the body;

a main housing including:

10 a bottom plate having a hole through which the lead is inserted; and

a terminal retainer portion formed on the bottom plate for retaining the body of the insulation displacement terminal;

15 a circuit board, wherein the lead inserted through the hole of the bottom plate of the main housing is soldered to the circuit board;

a first cover housing attached to the main housing, wherein a first retaining space for the insulation displacement terminal is defined between the main housing and the first cover housing; and

20 a second cover housing attached to the main housing, wherein a second retaining space for the circuit board is defined between the main housing and the second cover housing,

25 wherein the insulated wire has a pair of bent portions, formed by the first covering housing, at both sides of the

body of the insulation displacement terminal.

2. The insulation displacement connector with a built-in board according to Claim 1, wherein the pair of bent portions
5 of the insulated wires include a crank-like bent portion formed by opposed portions of the main housing and first cover housing.

3. The insulation displacement connector with a built-in board according to Claim 1, wherein the opposed portions of
10 the main housing and first cover housing include an end wall of the first cover housing, further comprising a means for connecting the end wall to the portion of the main housing which corresponds thereto.

15 4. The insulation displacement connector with a built-in board according to Claim 3, wherein the insulated wires are plural parallel-extending insulated wires, and

wherein the connecting means includes:

20 a projection which are provided on either one of the main housing and first cover housing, and which extends between the adjacent insulated wires; and

a recess provided in the other of the main housing and first cover housing and engaged with the corresponding projection.

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5. An insulation displacement connector with a built-in

board, comprising:

an insulation displacement terminal including:

a body having an insulation displacement blade connectable with an insulated wire at an intermediate portion
5 of the insulated wire by insulation displacement; and

a lead extending from the body;

a main housing including:

a bottom plate having a hole through which the lead is inserted; and

10 a terminal retainer portion formed on the bottom plate for retaining the body of the insulation displacement terminal;

a circuit board, wherein the lead inserted through the hole of the bottom plate of the main housing is soldered
15 to the circuit board;

a first cover housing attached to the main housing, wherein a first retaining space for the insulation displacement terminal is defined between the main housing and the first cover housing;

20 a second cover housing attached to the main housing, wherein a second retaining space for the circuit board is defined between the main housing and the second cover housing; and

a projection and an end wall provided on the first cover housing and adapted to bend the insulated wire at both
25 side portions of the body of the insulation displacement terminal.

6. The insulation displacement connector with a built-in board according to Claim 5, wherein the main housing has a wire retainer portion on one side of the body of the insulation displacement terminal, and a recess on further outer side of the wire retainer portion, and

wherein the insulated wire is bent in the crank-like shape by the wire retainer portion on one side of the body of the insulation displacement terminal, the recess of the main housing, and the projection of the first cover housing.

7. An insulation displacement connector with a built-in board, comprising:

an insulation displacement terminal including:

15 a body having an insulation displacement blade connectable with an insulated wire at an intermediate portion of the insulated wire by insulation displacement; and

a lead extending from the body;

a main housing including:

20 a bottom plate having a hole through which the lead is inserted; and

a terminal retainer portion formed on the bottom plate for retaining the body of the insulation displacement terminal;

25 a circuit board, wherein the lead inserted through the hole of the bottom plate of the main housing is soldered

to the circuit board;

a first cover housing attached to the main housing,
wherein a first retaining space for the insulation displacement
terminal is defined between the main housing and the first
5 cover housing; and

a second cover housing attached to the main housing,
wherein a second retaining space for the circuit board is defined
between the main housing and the second cover housing,

wherein the second cover housing has a portion for
10 receiving an insulation displacement load of the insulation
displacement terminal via the bottom plate and circuit board,
wherein the portion is formed on a position opposed to the
terminal retainer portion of the main housing.

15 8. The insulation displacement connector with a built-in
board according to Claim 7,

wherein the second cover housing includes a rib, and
a box-like member wherein at least a part of the box-like member
is formed by the rib, and

20 wherein the receiving portion is provided in the box-like
portion.

9. The insulation displacement connector with a built-in
board according to Claim 8, wherein the bottom plate of the
25 main housing includes a rib capable of holding the circuit
board between the second cover housing and the rib of the second

cover housing.

10. The insulation displacement connector with a built-in
board according to Claim 7, wherein the lead includes a deformable
5 portion capable of being elastically deformed by the insulation
displacement load.

11. The insulation displacement connector with a built-in
board according to Claim 10, wherein the deformable portion
10 includes a portion bent in the crank-like shape.